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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,492	10/15/2004	Matthias Muth	DE02 0097 US	4584

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
INTELLECTUAL PROPERTY & STANDARDS
1109 MCKAY DRIVE, M/S-41SJ
SAN JOSE, CA 95131

EXAMINER

DESCHERE, ANDREW M

ART UNIT	PAPER NUMBER
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2836

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/511,492

Applicant(s)

MUTH, MATTHIAS

Examiner

Andrew M. Deschere

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 15Oct04.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

The Information Disclosure Statement filed 15 October 2004 contains a minor typo. The Examiner has corrected the entry "2002/001213" to properly read "2002/0001213".

Drawings

The drawings are objected to because they lack textual labels. The Examiner requests that block-diagram elements in the drawings (e.g. elements 1, 2, 3, 4, 5, 11, 12, 13, 14, and 15) be labeled so as to be readily recognizable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Lindberg (US 5,831,409) and Tamai (US 6,459,170).

Lindberg discloses an electronic vehicle system including voltage conversion, using battery as its primary source. A high voltage input of 320 volts from power distribution module 20 is received by DC/DC converter 38 (Figure 2). The DC/DC converter converts this high voltage to a 12 volt output, this low voltage supplied to motor controller 18 (column 4 line 63 to column 5 line 17). Within motor controller 18 is a low voltage power supply 42 (Figure 4). The low voltage power supply 42 regulates the 12 volt output from DC/DC converter 38 to provide a plurality of low voltages: +5 volts, +/-15 volts, and +20 volts (column 6 line 66 to column 7 line 10).

However, Lindberg does not disclose that the DC/DC converter may be switched off by a control means. Tamai teaches an on-board electric power supply system with conversion from 42 volts to 12 volts. Conventionally, a DC/DC voltage converter will only be switched on by a controller when the low voltage (12 volt) side has its voltage drop below a specified value (column 1 lines 28-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to include a controller to activate and de-activate the DC/DC converter of Lindberg according to the voltage needed at its output in order to reduce current consumption.

Claim 6. Lindberg discloses that the optimal voltage that is applied to the DC/DC converter is 320 volts, however, a wide voltage range, e.g. 120 volts to 400 volts, may be

Art Unit: 2836

supplied (column 4 lines 30-42). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lindberg to operate with a 42 volt system, such as that taught by Tamai. Such a modification would allow the invention of Lindberg to be used in a hybrid vehicle as opposed to only an electric vehicle (such a modification is suggested by Lindberg, see column 2 lines 16-24).

Claims 3 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Lindberg and Tamai in view of Hinman (US 2002/0001213).

A combination of Lindberg and Tamai provides a voltage conversion system in a vehicle with multiple outputs and a controlled DC/DC converter. However, there is no suggestion to combine circuit components on an integrated circuit. Hinman discloses an integrated circuit switching power converter, wherein a single IC package contains all the components of a main and auxiliary power supply (Figure 1). The package includes control circuitry and level shifters, as well as multiple inputs and outputs. It would have been obvious to one of ordinary skill in the art at the time of the invention to enclose the components of the motor controller of Lindberg in an integrated circuit. This would make the motor controller simple and compact in construction, efficient to operate, and economical to produce (Hinman, paragraphs 7 and 19).

Claim 4. It would have further been obvious to include the DC/DC converter of Lindberg on the integrated circuit for the motor controller above to provide further compact construction and efficiency in operation.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Lindberg and Hinman.

Lindberg discloses an electronic vehicle system including voltage conversion. A high voltage input of 320 volts from power distribution module 20 is received by DC/DC converter 38 (Figure 2). The DC/DC converter converts this high voltage to a 12 volt output, this low voltage supplied to motor controller 18 (column 4 line 63 to column 5 line 17). Within motor controller 18 is a low voltage power supply 42 (Figure 4). The low voltage power supply 42 regulates the 12.volt output from DC/DC converter 38 to provide a plurality of low voltages: +5 volts, +/-15 volts, and +20 volts (column 6 line 66 to column 7 line 10). Further within motor controller 18 is vector control board 46, which controls the operation of various external devices, such as oil pump unit 34, radiator/fan 36, or battery charger 16 (column 8 lines 3-10).

However, Lindberg provides no suggestion to combine circuit components on an integrated circuit. Hinman discloses an integrated circuit switching power converter, wherein a single IC package contains all the components of a main and auxiliary power supply (Figure 1). The package includes control circuitry and level shifters, as well as multiple inputs and outputs. It would have been obvious to one of ordinary skill in the art at the time of the invention to enclose the components of the motor controller of Lindberg in an integrated circuit. This would make the motor controller simple and compact in construction, efficient to operate, and economical to produce (Hinman, paragraphs 7 and 19).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Itoh (US 5,796,175) discloses a power supply controller for a vehicle with DC/DC conversion and multiple outputs. Ozawa (US 6,323,608) discloses an electrical controller in a vehicle with control of a DC/DC converter.


Art Unit: 2836

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Deschere whose telephone number is (571) 272-8391. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMD


BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER